Claim Listing

1-31. Cancelled.

32. (Currently amended) Detector according to Claim ~~31~~ 45 adapted for detecting rotational movement, comprising: at least one rotatable exciter magnet (EM) ~~–, only one associated ferromagnetic element (FE) having Weiss regions and Bloch walls associated with the ferromagnetic element (FE), and, at least one induction element (SP, SP1) and at least one sensor element (SE, SP2 /HS) for detecting the polarity and the position of the rotatable exciter magnet (EM) representing the direction of rotational movement of said exciter magnet (EM) at the time (T_S) that the magnetization of the ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM)~~.

33. (Currently amended) Detector according to Claim ~~31~~ 45 adapted for detecting rotational movements, comprising: an evaluation circuit (30), said evaluation circuit includes a counter (~~36~~ 38), a capacitor, and a non volatile memory unite (36); and, said ~~at least one rotatable~~ exciter magnet (EM) being rotatable~~, only one associated ferromagnetic element (EM) including Weiss regions and Bloch walls, and, at least one induction element (SP, SP1) and at least one sensor element (SE, SP2 /HS) associated with said ferromagnetic element (FE) for detecting the polarity and the position of the exciter magnet (EM) representing the direction of the rotational movement of said exciter magnet (EM) at the time (T_s), that the magnetization of the ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM), whereby the counter (36) is part of an associated evaluation circuit comprising a nonvolatile memory unit (36) and a capacitor (C)~~.

34. (Currently amended) Detector according to Claim 33 adapted for detecting rotational

movements, ~~comprising: the complete set of information available at the time (T_s) for determining~~ further comprising, a Hall sensor, wherein the polarity and direction of movement of ~~the~~ said exciter magnet (EM) at time (T_s) is determined from: ~~comprises:~~ data in ~~the~~ said nonvolatile memory (36) and ~~the~~ said first and second ~~signals at output terminals~~ outputs (22, 23); ~~of the induction coils (SP1, SP2)~~ or, from data in said nonvolatile memory (36) and said first ~~the signals at~~ output ~~terminals~~ (22) and said second output (24), said second output generated by a ~~of the induction coil (SP) and at output terminals (24) of the~~ Hall sensor (HS) instead of said sensor element surrounding said ferromagnetic element.

35. (Currently amended) Detector according to Claim ~~31~~ 45, characterized in that ~~the~~ said ferromagnetic element (FE) is a pulse wire.

36. (Currently amended) Detector according to ~~Claims~~ claim ~~31~~ 45, characterized in that ~~the~~ said induction element (SP) ~~or SP1)~~ is a coil ~~and~~ used to measure ~~the~~ said magnetization direction of said ferromagnetic element (FE) ~~and,~~ in conjunction with ~~the~~ said sensor element (SE)~~, to determine the direction in which the remagnetization of the ferromagnetic element (FE) is triggered~~.

37. (Currently amended) Detector according to Claim ~~31~~ 45, characterized in that ~~the~~ said sensor element (SE) is a second induction coil (SP2) wound over ~~the~~ said ferromagnetic element (FE) and is used to determine the direction in which the remagnetization of the ferromagnetic element (FE) is triggered.

38. (Currently amended) Detector according to Claim ~~31~~ 45, characterized in that ~~the~~ said sensor element (SE) is a Hall sensor (HS) for measuring the polarity ~~or~~ and determining the position of the exciter magnet (EM) instead of said sensor element surrounding said

ferromagnetic element.

39. (Currently amended) Detector according to Claim ~~31~~, 45, characterized in that said exciter magnet moves in two rotational directions, and, ~~the~~ said ferromagnetic element (FE) has an axis[[,]] which is mounted parallel to ~~the~~ said direction of movement of ~~the~~ said exciter magnet (EM).

40. (Currently amended) Detector according to Claim ~~31~~, 45, characterized in that said exciter magnet moves in two rotational directions, and, ~~the~~ said ferromagnetic ~~elements~~ element (FE) has an axis[[,]] which is mounted perpendicular to ~~the~~ said direction of movement of ~~the~~ said exciter magnet (EM).

41. (Currently amended) Detector according to C1aim ~~31~~, 45, characterized in that at least one ferromagnetic flux conducting piece (FL1 and/or FL2) for guiding and/or bundling the flux ~~is assigned to the~~ resides proximate to said ferromagnetic element (FE).

42. (Currently amended) Detector according to Claim ~~31~~, 45, characterized in that the energy supply for ~~the~~ said evaluation circuit (30) is taken from ~~the~~ said first and second output signals ~~sent by the induction coils (SP, SP1, SP2)~~ used to detect position and/or polarity of said exciter magnet.

43. (Currently amended) Detector according to Claim 34, characterized in that ~~the~~ said nonvolatile memory unit (36) is a FRAM and/or an EEPROM unit.

44. (Currently amended) Detector according to Claim ~~31~~, 45, characterized in that ~~one of the coils (SP/SP1)~~ either an induction element (SP) or a sensor element (SE) can be supplied with an external current pulse, which serves either to initiate the biasing of the ferromagnetic element (FE) or to continue ~~that~~ biasing.

45. (New) Detector for detecting movements, comprising:

at least a moveable exciter magnet (EM);

only one ferromagnetic element (FE) having Weiss regions and Bloch walls;

an induction element (SP) surrounding said ferromagnetic element (FE);

a second induction element (SP2) surrounding said ferromagnetic element, or, a sensor element (SE) coordinated to said ferromagnetic element (FE);

said induction element (SP) provides a first output (22) at time Ts when said ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM);

said second induction element (SP2) or said sensor element (SE) provides a second output (23) substantially but not precisely simultaneously with said first output at time Ts when said ferromagnetic element (FE) is triggered and remagnetized by said exciter magnet (EM) without further movement of said exciter magnet (EM);

when said second induction element is used, said first and second outputs are shifted in time with respect to each other, said time shift and sequence of occurrence of said first and second outputs determines the direction in which said remagnetization of said ferromagnetic element is triggered and the polarity and position of said exciter magnet (EM); and,

when said sensor element (SE) is used, the direction in which said remagnetization of said ferromagnetic element is triggered by said exciter magnet (EM) is established by whether or not said sensor element (SE) has been excited.